

Causes of Febrile Illness in Rural Thailand

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Background: Undifferentiated febrile illnesses are a major cause of morbidity in tropical countries; in Thailand the annual incidence of pyrexia of unknown origin was 342/100,000. **Objectives:** We sought to describe the causes and clinical discriminators of febrile illness in two provinces. **Methods:** All patients ≥ 7 years presenting with documented fever $> 38^{\circ}\text{C}$ without focal infection were eligible to be enrolled at 4 hospitals. Acute and convalescent blood samples were used for blinded comparisons of 4 rapid diagnostic assays to “gold standard” testing at reference laboratories in Atlanta and Bangkok, including Leptospirosis MAT, Dengue EIA, Rickettsial ELISA, and others. **Results:** Of 743 febrile patients enrolled in the first 12 months, 98.5% provided both acute and convalescent sera. Testing to date documented acute dengue in 21%; these were younger (12 vs. 28 years, $p<0.01$), and had lower mean platelet ($196,000/\text{mm}^3$; $p=0.03$) and leukocyte counts ($5300/\text{mm}^3$; $p<0.01$), than the other febrile patients. The 14% with murine typhus had longer duration of fever (5.0 vs 3.5 days, $p<0.01$), and more often had myalgia (88% vs 72%, $p=0.04$); the 10% with spotted-fever group rickettsial infection were older (41 vs 25 years, $p<0.01$), and more often had abdominal pain (53% vs. 32%, $p=0.02$) and hemoconcentration (mean hemoglobin 16.2 vs 12.8 g/dl, $p<0.01$); and the 6.2% of patients with leptospirosis were more likely to have jaundice (40% vs 14%, $p<0.01$) and elevated creatinine (1.7 vs 1.0 mg/dl, $p<0.01$). All rapid tests were insensitive ($<20\%$ compared with the gold standards) using acute sera, but better on convalescent-phase sera. **Conclusions:** Important causes of undifferentiated fever in Thailand include dengue, murine typhus, spotted fever rickettsial disease, and leptospirosis; certain distinctive clinical features were identified, but rapid antibody tests were insensitive.

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